

**THE UNITED STATES
PATENT AND TRADEMARK OFFICE**

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PATENT APPLICATION

Case: Verizon 10 [01-1503]

Serial No: 09/933,063

Applicant: William D. GOODMAN

Filed: August 20, 2001

**Title: METHODS AND APPARATUS FOR EXTRAPOLATING PERSON AND
DEVICE COUNTS**

TC/A.U.: 2686

Examiner: Randy Peaches

**Mail Stop: Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450**

APPEAL BRIEF

**This Appeal Brief is submitted following issuance of a final Office Action by
the Examiner on February 23, 2005.**

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I. Real Party In Interest

The real party in interest is Verizon Services Corp. The assignment of the above referenced patent application to Verizon Services Corp. was recorded in the Patent Office on 8/20/2001 at Reel/Frame 012100/0810.

II. Related Appeals and Interferences

There are no related appeals or interferences.

III. Status of Claims

Claims 1-3, 13-17 and 20 stand rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,487,413 B1 to Suojasto. Claims 11 and 12 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Suojasto in view of U.S. Patent No. 5,659,596 to Dunn. Claims 4-8 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Suojasto in view of U.S. Patent No. 6,192,243 B1 to Yang et al. Claims 9-10 and 18 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Suojasto in view of U.S. Patent Number 6,535,745 B1 to Seraj. Claim 19 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Suojasto in view of Seraj and in further view of Yang et al. The rejection of claims 1-20 is being appealed.

New claims 21-24 submitted by Applicant subsequent to the final Office Action dated February 23, 2005 have not been entered by the Examiner, and are therefore not a subject of this Appeal.

IV. Status of Amendments

All amendments prior to the final Office Action dated February 23, 2005 have been entered. An Amendment was filed subsequent to the final rejection made in the February 23, 2005 Office Action, and an Advisory Action dated May 20, 2005 stated that this Amendment was not entered by the Examiner because the Amendment raised new issues that would require further consideration and/or search.

V. Summary of Claimed Subject Matter

In various exemplary embodiments described in the specification of the present application, the number and, optionally, information on the type of active wireless devices, in an area is collected. The collection may be information in an automated manner. The active device count may be collected from each of a variety of wireless communication centers. As part of the inventive process, active device count information is mapped, e.g., correlated, to one or more specific targeted geographic areas of interest (see page 4, lines 1-15). In some embodiments, geographic tracking area data includes information relating the probable distribution of active devices in a cell (wireless service area) to different geographic regions within the cell (see page 15, lines 4-7).

In accordance with the various exemplary embodiments the number of people present in a region and/or estimates of the flow of people can be generated from the number, e.g., count, and type of active wireless devices in one or more geographic regions of interest (see page 7, lines 6-12). The embodiments described in the present application support services such as measuring the size of a crowd (see page 4, lines 28-29) and distribution of the crowd within the area (see page 15, lines 4-9).

In some embodiments by analyzing data on the number of active devices over a period of time, information on the movement, e.g., flow of people in a geographic area is generated. The methods disclosed by the present application are well suited for providing traffic flow information, e.g., information on how the number of people or devices in a geographic region varies over time (see page 22, lines 17-26). Accordingly, another useful aspect of the subject matter disclosed by the present application is to measure highway traffic flows and/or detect traffic jams (see page 5, lines 1-2).

Other embodiments take advantage of the fact that different types of people, e.g., business people vs. general population, are more likely to use some types of wireless devices than other types. Thus, various embodiments are directed to determining a crowd composition based on predicting the characteristics of the people in a geographic area from the type and number of active wireless devices in the area.

From the above discussion and cited portions of the application, it can be appreciated that the application fully supports and is directed to the subject matter in representative claim 1 which recites:

A method of processing active wireless device statistics, the method comprising:
receiving statistics indicating the number of active wireless devices in at least one communications cell;
estimating the number of people in a geographic region of interest from the number of active wireless devices indicated by the received statistics. (bold added for emphasis)

It can also be appreciated that the application fully supports representative dependent claim 6 which recites:

The method of claim 4, further comprising:
predicting the distribution of the estimated number of people in a geographic region of interest from the received statistics on the number of active wireless devices. (bold added for emphasis)

It can further be appreciated that the application fully supports representative dependent claim 9 which recites:

The method of claim 2,
wherein the first count is a count of a **first type of wireless device** and said second count is a count of a **second type of wireless device which is different from said first type. (bold added for emphasis)**

It can also be seen that the application fully supports representative independent claim 11 which recites:

A method of processing active wireless device statistics, the method comprising:
receiving statistics on the number and type of active wireless devices in at least one communications cell;
estimating the number of people in a geographic region of interest from the received statistics on the number of active wireless devices; and
predicting characteristics of the people in the geographic region of interest from the type and number of active wireless devices in the geographic region of interest. (bold added for emphasis)

Finally, it can be seen that the application fully supports representative independent claim 14 which recites:

A method comprising:

collecting active wireless device statistics from a communications cell over a period of time; and
detecting changes in the collected active wireless device statistics;
and
generating a report including estimating the flow of people through said geographic area based on detected changes in the collected active wireless device statistics. (bold added for emphasis)

VI. Grounds of Rejection to be Reviewed on Appeal

- A) Rejection of claims 1-3, 13-17 and 20 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,487,413 B1 to Suojasto.
- B) Rejection of claims 11 and 12 under 35 U.S.C. 103(a) as being unpatentable over Suojasto in view of U.S. Patent No. 5,659,596 to Dunn.
- C) Rejection of claims 4-8 under 35 U.S.C. 103(a) as being unpatentable over Suojasto in view of U.S. Patent No. 6,192,243 B1 to Yang et al.
- D) Rejection of claims 9-10 and 18 under 35 U.S.C. 103(a) as being unpatentable over Suojasto in view of U.S. Patent Number 6,535,745 B1 to Seraj.
- E) Rejection of claim 19 under 35 U.S.C. 103(a) as being unpatentable over Suojasto in view of Seraj and in further view of Yang et al.

VII. Argument

- A. **The Rejections of Claims 1-3, 13-17 and 20 under 35 U.S.C. § 102(e) as Anticipated by Suojasto Should be Overruled and/or Withdrawn**

1. Rejections of Claims 1-3, 13, 17 and 20 Under § 102(e)

Claim 1 recites:

A method of processing active wireless device statistics, the method comprising:
receiving statistics indicating the number of active wireless devices in at least one communications cell;
estimating the number of people in a geographic region of interest from the number of active wireless devices indicated by the received statistics.

Claims 2-3 and 13 are dependent from claim 1, and therefore include the same limitations as claim 1. Claims 17 and 20 are system claims that recite means for performing method steps recited in claim 1. Appellant's arguments as to claim 1 are thus applicable to claims 2-3, 13, 17 and 20.

The Suojasto reference does not disclose, teach, or suggest **estimating the number of people in a geographic region of interest from the number of active wireless devices indicated by the received statistics**, or any means therefor. In contrast to the claims of the present application, the Suojasto patent is directed to **estimating the need for capacity for different parts of a communication system** based on stored data generated from location update messages which indicates the number of **mobile stations** located in an area. (See, Abstract, and Col. 2, lines 39-65).

The Suojasto patent is devoid of any reference to the word "people". There is no mention of generating an estimate of the number of people in an area. This absence is not surprising, since the Suojasto reference is concerned with determining capacity for mobile devices based on the number of devices in an area; the number of actual people in that area is not relevant to that determination. Accordingly, the Suojasto patent in no way anticipates or renders obvious representative claim 1.

The Examiner states in the Final Office Action (2/23/2005) on p. 2, No. 1, 2nd bullet: "estimating the number said mobile stations, which reads on claimed 'people'". The Examiner's equating of "people" to "mobile stations" is the crux of the error of the Examiner's rejection of the pending claims. The Examiner at various times equates "mobile stations" with "people" or "number of mobile stations" with "number of people" (see, e.g., p. 5 under "Regarding claim 17"). Mobile stations are **NOT** people.¹

Representative claim 1 is indicative of the disparity between the Examiner's arguments equating "mobile stations" with "people" and the reality of the pending claims. Claim 1 states that after "receiving statistics indicating the number of active wireless devices", the **following step is performed: "estimating the number of people in a geographic region of interest from the number of active wireless devices indicated by the received statistics."**

¹ In the interest of a complete record, Appellant attaches in the Exhibit Appendix an excerpt of Random House Webster's College Dictionary that provides the following definition for "people" – "human beings, as distinguished from animals or other beings".

Not only do the pending claims, as represented in claim 1, **not** equate "mobile devices" with "people", but an element of claim 1 (and the other pending claims) is that the number of devices is **utilized to estimate the number of people**. Under the Examiner's application of *Suojasto*, the Examiner has effectively read this method step out of claim 1.

It is a repeatedly stated purpose of the instant invention to differentiate numbers of people from numbers of devices. For example, see p. 1, lines 20-22 of the specification, which state that one use of the instant invention would be to estimate the distribution and sizes of crowds, in order to better place security personnel. This would have no meaning regarding the distribution and size of "groups of wireless devices". Similarly, the number of **people** as distinct from the **number of devices** would have no meaning in the *Suojasto* system which is concerned with estimating communication capacity required, which explains why estimating the number of people is not discussed or implied anywhere in the reference (or in any of the other cited references).

In the Response to Arguments section of the Final Office Action the Examiner states:

The Applicant's primary argument is based on the premise that the estimation of number of people within an environment cannot truly be based on the number of mobile devices within that area, whether they are active or passive.
(Office Action page 14, bold added for emphasis)

This is incorrect. Applicant's position is that it is possible and, in some cases beneficial to estimate the number of people in a geographic area based on the number of mobile communications devices, e.g., active devices, in an area. This estimation is in fact taught by Applicants pending application. **Applicant's position is that the applied reference does NOT show this being done.** Again, the word "people" does not appear in the *Suojasto* patent. As noted above, an estimate of a number of active and passive devices in a region is not an estimate of the number of **people** in the region.

The Examiner, in the response to Appellant's arguments, goes on to state:

However, the Examiner concludes that it is inherent that the association of "people" with the number of mobile devices within a given area is clearly justified by the fact that the cited prior art teaches of providing information on "active" mobile devices. (Office Action Page 14).

The Examiner's apparent inherency argument is not supported by the references. Applicant is claiming an estimating step in claim 1 and this step is not shown in the applied references and is not "inherent". There is no need to generate an estimate of the number of people in a geographic region in the applied reference nor is there anything in the reference to suggest that such an estimate is made.

"The Patent and Trademark Office (PTO) must consider all claim limitations when determining patentability of an invention over the prior art." *In re Lowry*, 34 F.3d 1579, 1582, 32 USPQ2d 1021, 1034 (Fed. Cir. 1994) (citing *In re Gulack*, 703 F.2d 1381, 1385, 217 USPQ 401, 403-04 (Fed. Cir. 1983)). Here, representative claim 1 has both the limitation of estimating the number of devices and the limitation of estimating the number of people, and the Examiner has rejected this claim based on a reference that counts devices, but not people, thereby ignoring the "estimating people" limitation of representative claim 1.

In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999), holds that anticipation under 35 U.S.C. 102 requires that each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. If the prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if that element is "inherent" in its disclosure. To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

Here, the Suojasto reference (and the other cited references) do not even mention the estimation of a number of people, and it cannot be fairly argued that such an estimation is "necessarily present" in the Suojasto system (or any of the systems described in the other cited references). Therefore, there is no anticipation of the present invention by the Suojasto patent.

For example, it seems likely that at the time the inventions of the present application were made, not every person possessed a mobile device. Likewise it seems likely that at least some persons possessed multiple mobile devices, or that some mobile devices were not possessed by any person (e.g., mobile devices associated with mobile/remote equipment). In such a case, it cannot be argued that the numbers of people and numbers of devices is inherently the same, as the Examiner contends.

Repeated requests have been made to the Examiner to explicitly state whether, as appears to be the case, that the asserting “devices” are “people” and numbers of mobile devices are **identical** to numbers of people, or if there is some other unstated relationship between the number of devices in a region and the number of people in the region. The Examiner has been asked to point out the basis of such conclusions in the Suojasto reference, or if the Examiner is using his personal knowledge, to supply an affidavit to that effect. These requests have not resulted in any response from the Examiner, and therefore Applicant has not had a fair opportunity to rebut whatever the specific contention the Examiner is regarding is the specific inherent relationship between number of devices and number of people, or the source of such contention.

In view of the above discussion, it is respectfully submitted that the Examiner has failed to support the rejection of claim 1 based on the Suojasto reference. As claims 2-3, 13, 17 and 20 all include similar limitations to that of claim 1, it is also respectfully submitted that the Examiner has similarly failed to support the rejection of these claims based on the Suojasto reference as well. Appellant respectfully requests that the rejections of claims 1-3, 13, 17 and 20 be overruled and/or withdrawn.

2. Rejections of Claims 14-16 under § 102(e)

Claim 14 recites a method comprising:

collecting active wireless device statistics from a
communications cell over a period of time; and
**detecting changes in the collected active wireless device
statistics; and**
generating a report including **estimating the flow of
people through said geographic area based on detected changes
in the collected active wireless device statistics.**

Claims 15 and 16 are dependent from claim 14, and therefore include the same limitations as claim 14. Appellants arguments as to claim 14 therefore apply equally to claims 15 and 16.

In rejecting claim 14 the Examiner states:

... Suojasto teaches ... generating a report, as disclosed in column 4 lines 30-35, **that disclose the traffic capacity** based on the said active and passive mobile stations collected statistics. (Office Action page 4, bold added for emphasis)

The Examiner relies on column 4, lines 30-35 of the Suojasto patent, which refers to **communications traffic capacity** to reject the claim. This portion of the Suojasto patent states:

... The most significant advantage of the method of the invention is thus that it gives a more accurate picture of the **number of phones** located in the predetermined geographical area of interest, whereby potential bottlenecks concerning **the capacity of the system** can be found more easily than previously ...[emphasis added]

As noted above for claim 1, the Suojasto patent is directed to estimating the need for capacity for different parts of a communication system based on stored data generated from location update messages which indicates the number of mobile stations located in an area. (See, Abstract, and Col. 2, lines 39-65). The Suojasto patent does not describe any estimation of a number of people in an area, much less estimation of a flow of people through an area, based on collected wireless device statistics. The capacity and potential bottlenecks discussed in the portion of the Suojasto patent cited by the Examiner are system (communications) capacity issues and do NOT involve estimating the flow of actual people. Again, this absence is not surprising, since the Suojasto patent is concerned with determining capacity for mobile devices based on the number of devices in an area; the number of actual people in that area (or their flow through an area) is not relevant to that determination. Accordingly, the Suojasto patent in no way anticipates or renders obvious claim 14.

In view of the above discussion, it is respectfully submitted that the Examiner has failed to support the rejection of claim 14 based on the Suojasto reference. As claims 15 and 16 include the same limitations to that of claim 14, it is also respectfully submitted that the Examiner has similarly failed to support the rejection of these claims based on the Suojasto reference as well. Appellant respectfully requests that the rejections of claims 14-16 be overruled and/or withdrawn.

B. The Rejections of Claims 11-12 under 35 U.S.C. § 103(a) as Unpatentable over Suojasto in View of Dunn Should be Overruled and/or Withdrawn

Claim 11 recites a method that comprises:

receiving statistics on the number and type of active wireless devices in at least one communications cell;
estimating the number of people in a geographic region of interest from the received statistics on the number of active wireless devices; and
predicting characteristics of the people in the geographic region of interest from the type and number of active wireless devices in the geographic region of interest.

Because claim 11 contains the same limitations as claim 1, all of the arguments above regarding claim 1 apply equally to claim 11. Additionally, however, claim 11 has the further limitation of "predicting characteristics of the people in the geographic region of interest from the type and number of active wireless devices in the geographic region of interest." This limitation further differentiates Applicant's invention from the cited references and renders claim 11 patentably distinct from claim 1.

As is stated in the specification of the present application at p. 16, lines 4-12:

"Different types of people tend to use different types of devices. For example, business people are more likely to use notebook computers than the general population. Since different types of wireless devices may be used and tracked, insights into the characteristics of the people in a geographic region may be gained from correlating known user characteristics of particular types of devices with the active device information 507."

The Examiner refers on p. 7 of the Final Office Action to Dunn at column 9 lines 38-45:

"Each LSO interacted with also receives and stores RSU device identification codes, such as the MIN and ESN, the current control channels which the RSU is operating under, the RSU device identification or specification codes **identifying the type of device being used and more importantly, the user identification code.** Thus, the instant invention provides offices which store both wireless and wireline devices and user data." (bold added)

The Dunn reference discloses a system for location of communication end user. However, nowhere in Dunn is there a teaching or suggestion, nor is such a teaching or suggestion alluded to by the Examiner, to **predict characteristics of the people** in the geographic area. The Examiner acknowledges that the Suojasto patent fails to show this feature stating:

"Suojasto fails to clearly disclose **wherein predicting characteristics of the devices** in the geographic region of interest from the type of devices in the geographic region of interest." (Office Action page 7, bold and underlining added)

Only characteristics of devices are discussed in Dunn or any of the other cited references. Further, Applicant respectfully submits that the Examiner has merely indicated that the Dunn patent describes providing device type information. In rejecting claim 11, the Examiner has not cited anything in Dunn which describes "**predicting characteristics of people**" from the type of active wireless devices which is the real issue. Applicant respectfully further submits that the user identification code mentioned in the Dunn patent is not a "type of device" and therefore cannot be used to support a rejection of claim 11.

Based on the above arguments, claim 11, and claim 12 which is dependent therefrom, are patentable over the cited references. It is respectfully submitted that the Examiner has failed to support the rejection of claims 11 and 12 based on the Suojasto reference in view of the Dunn reference, and therefore these rejections should be overruled and/or withdrawn.

C. The Rejections of Claims 4-8 under 35 U.S.C. § 103(a) as Unpatentable over Suojasto in view of Yang et al. Should be Overruled and/or Withdrawn

1. Rejection of claims 4 and 5 under § 103(a)

Claims 4 and 5 are dependent from claim 1, and therefore include all of the limitations of claim 1. Thus all of the arguments applicable to claim 1 with respect to the Suojasto patent are equally applicable to claims 4 and 5.

The Yang et al. reference discloses wireless communications systems for servicing mobile subscribers which dynamically optimizes the absolute number of channels reserved for use only as guard channels. As with Suojasto, the Yang et al. reference does not disclose, utilize, discuss, teach, imply, or would even find beneficial the estimation of numbers of people in a geographic area. Therefore, Yang et al. adds nothing to the deficiency of Suojasto to anticipate or render obvious claim 1 (on which claims 4 and 5 depend), which contains the limitation of **estimating the number of people in a geographic region of interest from the number of active wireless devices.**

Based on the above arguments, claims 4 and 5, are patentable over the cited references. It is respectfully submitted that the Examiner has failed to support the rejection of claims 4 and 5 based on the Suojasto reference in view of the Yang et al. reference, and therefore these rejections should be overruled and/or withdrawn.

2. Rejections of claims 6-8 under § 103(a)

For clarification purposes, claims 1-5 are included here as background to representative claim 6, as claim 6 depends from claims 1-5:

Claim 1 - A method of processing active wireless device statistics, the method comprising:

receiving statistics indicating the number of active wireless devices in at least one communications cell;

estimating the number of people in a geographic region of interest from the number of active wireless devices indicated by the received statistics.

Claim 2 - The method of claim 1, wherein receiving statistics includes:

receiving information from a plurality of different communications cells, said information including at a first count corresponding to the number of active devices in a first communications cell and a second count corresponding to the number of active devices in a second communications cell.

Claim 3 - The method of claim 2, wherein estimating the number of people in a geographic region of interest includes:

correlating the first and second counts corresponding to the first and second communications cells, respectively, to the geographic area of interest to generate a set of target area statistics including an estimate of the number of active wireless devices in the geographic area of interest.

Claim 4 - The method of claim 3, wherein estimating the number of people in a geographic region of interest includes:

performing an extrapolation operation on the estimate of the number of active wireless devices in the geographic area of interest to produce the estimate of the number of people in the geographic area of interest.

Claim 5 - The method of claim 4, further comprising:

generating a report including the estimate of the number of people in the geographic area of interest; and
outputting said report.

Claim 6 - The method of claim 4, further comprising:

predicting the distribution of the estimated number of people in a geographic region of interest from the received statistics on the number of active wireless devices.

As claim 6 is dependent on claim 1, all of the arguments above regarding claim 1 apply equally to claim 6. Additionally, however, claim 6 has the further limitation of stating that the **distribution of people** in a geographic region is predicted from the statistics on the number of active wireless devices. This limitation further differentiates Applicant's invention from the cited references and renders claim 6 patentably distinct from claim 1.

The Examiner states on p. 9, **Regarding claim 6:** "allows an accurate picture of said **mobile stations** in a said geographic area from the received said statistics on the number of said active mobile stations. See Suojasto column 4 lines 29-35." [emphasis added]

As discussed above, "mobile stations" are not "people". As stated in the specification of the present application which describes one exemplary embodiment, p. 15 lines 4-9: "Geographic tracking area data 510 includes information relating the probable distribution of active devices in a cell to different geographic regions within the cell. The geographic tracking area data 510 reflects the reality that device distribution within a cell is rarely uniform but is often predictable." Predicting the distribution of an estimated number of people within a geographic area based is not found or suggested in any of the cited references.

Based on the above arguments, claim 6, and claims 7 and 8 which is dependent therefrom, are patentable over the cited references. It is respectfully submitted that the Examiner has failed to support the rejection of claims 6-8 based on the Suojasto reference in view of the Yang reference, and therefore these rejections should be overruled and/or withdrawn.

D. The Rejection of Claims 9-10 and 18 under 35 U.S.C. § 103(a) as Unpatentable over Suojasto in view of Seraj Should be Overruled and/or Withdrawn

For clarification purposes, claims 1-2 are included here as background to claim 9, as claim 9 depends from claims 1-2:

Claim 1 - A method of processing active wireless device statistics, the method comprising:
receiving statistics indicating the number of active wireless devices in at least one communications cell;

estimating the number of people in a geographic region of interest from the number of active wireless devices indicated by the received statistics.

Claim 2 - The method of claim 1, wherein receiving statistics includes: receiving information from a plurality of different communications cells, said information including at a first count corresponding to the number of active devices in a first communications cell and a second count corresponding to the number of active devices in a second communications cell.

Claim 9 - The method of claim 2, wherein the first count is a count of a first type of wireless device and said second count is a count of a second type of wireless device which is different from said first type.

Because claim 9 is dependent on claim 1, all of the arguments above regarding claim 1 apply equally to claim 9. Additionally, however, claim 9 has the further limitation of stating that **the first count is a count of a first type of wireless device and said second count is a count of a second type of wireless device which is different from said first type.** This limitation further differentiates Applicant's invention from the cited references and renders claim 9 patentably distinct from claim 1.

The Examiner claims at p. 11 of the Final Office Action that Seraj teaches the above limitation in column 4 lines 19-24. However the cited portion of the reference merely states:

"With reference to FIG. 1, therein is shown a diagram of a wireless communications network 10. The network 10 includes a mobile station (MS) 12, which can be a wireless communications device such as a Personal Communications Service (PCS) or cellular phone, but may also include a computer, a Personal Digital Assistant (PDA), or other wireless terminal, for example."

Nowhere does Seraj teach or suggest **keeping separate counts of devices based on their types.**

The Examiner admits as much when he states at p. 11:

"Although, the cited reference of Seraj does not clearly specify that the traffic information, which reads on claimed 'count', received from the first and second cells depends on the type of device within the cell, it is obvious that the method of estimating the traffic conditions of a cell takes into consideration the different

type of devices being used within that given area and collectively, despite the type of device being used within the cell, gather the said traffic information.”

Collective accounting teaches away from generating and transmitting multiple separate counts for different types of devices. There is no teaching in either Suojasto or Seraj to separately count devices of different types based on their type, as is claimed in claim 9. Therefore, this is a further reason that none of the cited references render claim 9 – or claim 10 which is dependent therefrom, or claim 18 that recites means for performing the steps of claim 9 – obvious, and therefore claims 9, 10 and 18 are patentable over the cited references. Appellant respectfully requests that the rejections of claims 9, 10 and 18 should be overruled and/or withdrawn.

E. The Rejection of Claim 19 under 35 U.S.C. § 103(a) as Unpatentable over Suojasto in view of Yang et al. and Seraj Should be Overruled and/or Withdrawn


Claim 19 is dependent on claim 17, and thus includes all of the limitations of claim 17. The discussion above with respect to claim 17 is therefore equally applicable to claim 19. Furthermore, as noted in the discussions above, the Yang et al. and Seraj references do not overcome the deficiencies of the Suojasto reference with respect to the limitations of claim 17. As a result, Appellant respectfully requests that the rejection of claim 19 be overruled and/or withdrawn.

VIII. Conclusion

In conclusion, the cited references do not teach or suggest the estimation of the number of people, the distribution of people within an area, the use of statistics of different types of devices to predict the number and location of people, the characteristics of people, or the movement of people. All of these are claimed in the instant invention. Accordingly, even if combined, the references would not render the claimed invention anticipated or obvious. Therefore, it is respectfully submitted that claims 1-20 are patentable over the prior art of record and that each of the Examiner's rejection is in error and therefore should be overruled or withdrawn.

Respectfully submitted,

August 23, 2005


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Claim Appendix

COPY OF CLAIMS INVOLVED IN THE APPEAL

- 1 Claim 1 (previously presented): A method of processing active wireless device
2 statistics, the method comprising:
3 receiving statistics indicating the number of active wireless devices in at least
4 one communications cell;
5 estimating the number of people in a geographic region of interest from the
6 number of active wireless devices indicated by the received statistics.
•
- 1 Claim 2 (original): The method of claim 1, wherein receiving statistics includes:
2 receiving information from a plurality of different communications cells, said
3 information including at a first count corresponding to the number of active devices
4 in a first communications cell and a second count corresponding to the number of
5 active devices in a second communications cell.
- 1 Claim 3 (original): The method of claim 2, wherein estimating the number of people
2 in a geographic region of interest includes:
3 correlating the first and second counts corresponding to the first and
4 second communications cells, respectively, to the geographic area of interest to
5 generate a set of target area statistics including an estimate of the number of active
6 wireless devices in the geographic area of interest.
- 1 Claim 4 (original): The method of claim 3, wherein estimating the number of people
2 in a geographic region of interest includes:
3 performing an extrapolation operation on the estimate of the number of active
4 wireless devices in the geographic area of interest to produce the estimate of the
5 number of people in the geographic area of interest.
- 1 Claim 5 (original): The method of claim 4, further comprising:

2 generating a report including the estimate of the number of people in
3 the geographic area of interest; and
4 outputting said report;

1 Claim 6 (original): The method of claim 4, further comprising:
2 predicting the distribution of the estimated number of people in a
3 geographic region of interest from the received statistics on the number of active
4 wireless devices.

1 Claim 7 (original): The method of claim 6, wherein active device counts from
2 different wireless communications cells each at least partially overlapping said
3 geographic area of interest are used in predicting the distribution of the estimated
4 number of people.

1 Claim 8 (original): The method of claim 6, further comprising:
2 generating a report including the estimate of the number of people in
3 the geographic area of interest and information on the predicted distribution of the
4 estimated number of people.

1 Claim 9 (original): The method of claim 2, wherein the first count is a count of a first
2 type of wireless device and said second count is a count of a second type of wireless
3 device which is different from said first type.

1 Claim 10 (original): The method of claim 9, wherein the first type of wireless device
2 is a cell phone and the second type of wireless device is a personal data assistant.

1 Claim 11 (previously presented): A method of processing active wireless device
2 statistics, the method comprising:
3 receiving statistics on the number and type of active wireless devices in at
4 least one communications cell;

5 estimating the number of people in a geographic region of interest from the
6 received statistics on the number of active wireless devices; and
7 predicting characteristics of the people in the geographic region of interest
8 from the type and number of active wireless devices in the geographic region of
9 interest.

1 Claim 12 (original): The method of claim 11, further comprising the step of:
2 generating a report including the estimate of the number of people in
3 the geographic area of interest and information on the predicted characteristics of the
4 people.

1 Claim 13 (original): The method of claim 1, wherein said step of receiving statistics
2 on the number of active wireless devices includes:
3 receiving active wireless device statistics corresponding to different
4 points in time; and
5 generating, from received active wireless device statistics
6 corresponding to at least two different points in time, information on the flow of
7 traffic in the geographic region of interest.

1 Claim 14 (previously presented): A method comprising:
2 collecting active wireless device statistics from a communications cell
3 over a period of time; and
4 detecting changes in the collected active wireless device statistics; and
5 generating a report including estimating the flow of people through
6 said geographic area based on detected changes in the collected active wireless device
7 statistics.

1 Claim 15 (original): The method of claim 14, wherein the detected changes include
2 at least one of an increase and a decrease in the number of active wireless devices in a
3 communications cell.

1 Claim 16 (original): The method of claim 14, wherein the detected changes include
2 changes in the identity of the active wireless devices being serviced by the cell.

1 Claim 17 (original): An apparatus for estimating the number of people in a
2 geographic region, the apparatus comprising:
3 an interface for receiving an active wireless device count from at least
4 one communications cell;
5 means for estimating based on the received active wireless device
6 count the number of people in a geographic region including at least a portion of said
7 communication cell.

1 Claim 18 (original): The apparatus of claim 17,
2 wherein said interface receives wireless device count information
3 including a first count corresponding to a first communications cell and a second
4 count from a second communication cell; and
5 wherein means for estimating includes:
6 means for correlating the first and second counts corresponding to the first and
7 second communications cells, respectively, to a geographic area of interest to
8 generate a set of target area statistics including an estimate of the number of active
9 wireless devices in the geographic area of interest.

1 Claim 19 (original): The apparatus of claim 18, wherein said means for estimating
2 further includes:
3 means for performing an extrapolation operation on the estimate of the number of
4 active wireless devices in the geographic area of interest to produce the estimate of
5 the number of people in the geographic area of interest.

1 Claim 20 (previously presented): A wireless communications system, the system
2 comprising:
3 a plurality of wireless communications centers, each wireless
4 communications center collecting statistics on the number of active wireless devices
5 being serviced at a point in time;
6 a processing center coupled to the plurality of wireless communications
7 centers, the processing center receiving from said wireless communication centers the
8 statistics on the number of active wireless devices being serviced, the processing center
9 including:
10 means for estimating the number of people in a geographic region of
11 interest from the number of active wireless devices being serviced by said wireless
12 communications centers.

EVIDENCE APPENDIX

Random House Webster's College Dictionary, page 1000, including definition of term "people" (copyright 1995).

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